

1. CONTRACT
Y - T&M

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|---------------------------------|-------------------|
| 1. CONTRACT IS UNDER Y - T&M | PAGE OF 1 of 4 |
|---------------------------------|-------------------|

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|--|--|-----|--|
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) | | (X) | 9A. AMENDMENT OF SOLICITATION NO. |
| BALL AEROSPACE & TECHNOLOGIES CORP PO BOX 1062 1600 COMMERCE STREET BOULDER CO 80306-1062 | | | 9B. DATED (SEE ITEM 11) |
| CODE 13993 | | X | 10A. MODIFICATION OF CONTRACT/ORDER NO. F33657-96-D-2007 0012 |
| FACILITY CODE | | | 10B. DATED (SEE ITEM 13) 17 MAY 1999 |

☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. **FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.** If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

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| 13. THIS ITEM APPLIES ONLY TO MODIFICATION OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14 | |
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E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 copies to the issuing office.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

NSN 7540-01-152-8070 30-105 STANDARD FORM 30 (REV.10-83)
 PREVIOUS EDITION UNUSABLE Prescribed by GSA
 ConWrite Version 3.51 FAR (48 CFR) 53.243

SCHEDULE OF CHANGES

1. Pursuant to FAR 52.243-3 "Changes-Time-and-Materials or Labor Hours" Delivery Order 0012 is hereby amended to increase the order ceiling and obligate funds in the amount of \$244,833.00. The period of performance is hereby extended to be completed by 16 Sep 00.

- a). Contract Ceiling Changed FROM: \$572,472.00 TO: \$817,305.00, an increase of \$244,833.00
b). Contract Obligated Amount FROM: \$572,472.00 TO: \$817,305.00, an increase of \$244,833.00

2. The Cover Page, DD Form 1155, Block 25 "Total" is hereby changed from \$572,472.00 to \$817,305.00 an increase of \$244,833.00.

3. SECTION B: Changes to "Supplies or Services" are set forth below.

4. SECTION F: Changes to "Deliveries or Performance" are set forth on page 4 of this document.

5. SECTION G: Changes to "Contract Administration" are set forth on page 3 and 4 of this document.

6. SECTION H: In accordance with Section H, ASC Clause 5352.232-9305, Limitation of Government's Obligation-Time and Materials the ceiling for CLINs 0001, 0002, and 0004 is hereby changed from \$553,675.00 to \$798,508.00, an increase of \$244,833.00. No funds remain to be obligated.

7. SECTION J: Attachment 1, Statement of Work (SOW) titled "Reliability and Maintainability Risk Reduction Development for F-15 Avionics Systems" dated 04 Jan 1999, is replaced in its entirety by the SOW dated 14 Mar 00, attached hereto and made a part hereof.

8. This Supplemental Agreement constitutes a full and equitable adjustment and the Contractor releases the Government from any liability under the contract for further equitable adjustments arising out of or in connection with the changes effected hereby.

SECTION B

SECTION 2

| ITEM | SUPPLIES OR SERVICES | Qty Purch Unit | Unit Price Total Item Amount |
|------|--|---|---------------------------------|
| 0001 | CLIN Change | | \$707,885.00 |
| | | LO | +\$244,833.00 |
| | Noun: | RELIABILITY & MAINTAINABILITY RISK REDUCTION DEV. | |
| | Total Quantity: | 1 | |
| | New Total Item Amount: | \$707,885.00 | |
| | ACRN: | 9 | |
| | Security: | U | |
| | NSN: | N - Not Applicable | |
| | Contract type: | Y - TIME AND MATERIALS | |
| | Inspection: | DESTINATION | |
| | Acceptance: | DESTINATION | |
| | FOB: | DESTINATION | |
| | Descriptive Data: | | |
| | The Contractor shall provide a study work effort in accordance with the SOW entitled "Reliability and Maintainability Risk Reduction Development for F-15 Avionics Systems", dated 14 Mar 2000. Listed below by Primary Labor Categories per Contract Period are the estimated number of labor hours for this requirement. | | |

Period 4

| Labor Category | Estimated Hours |
|-----------------------------------|-----------------|
| Project/Program Manager | 35 |
| Senior Scientist/Engineer/Analyst | 2222 |
| Engineer/Analyst | 1088 |
| Research Assistant/Technician | 193 |
| Technician/Administrative Support | 264 |
| | <u>3802</u> |

Period 5

| Labor Category | Estimated Hours From: | Estimated Hours To: |
|-----------------------------------|--------------------------|------------------------|
| Project/Program Manager | 10 | 10 |
| Senior Scientist/Engineer/Analyst | 633 | 2248 |
| Engineer/Analyst | 312 | 762 |
| Research Assistant/Technician | 55 | 279 |
| Technician/Administrative Support | 76 | 236 |
| | <u>1086</u> | <u>3535</u> |
| TOTAL HOURS | 4888 | 7337 |

A. The total Period 5 hours were increased from 1,086 hours to 3,535 hours an increase of 2,449 hours, as set forth above.

B. This CLIN total is changed from \$463,052 to \$707,885, an increase of \$244,833.00 to cover performance through 16 Sep 00. This CLIN is fully funded.

| ITEM | SUPPLIES OR SERVICES | Qty Purch Unit | Unit Price Total Item Amount |
|--------|----------------------------------|-------------------------|---------------------------------|
| 000101 | CLIN Establish Noun: ACRN: | Funding Info Only AA | +\$0.00 |
| 000102 | CLIN Establish Noun: ACRN: | Funding Info Only AB | +\$244,833.00 |

| ITEM | SUPPLIES SCHEDULE DATA | QTY | SHIP TO | MARK FOR | TRANS PRI | DATE |
|------|------------------------|-----|---------|----------|-----------|-------------|
| 0001 | | 1 | U | | | 16 Sep 2000 |

Noun: RELIABILITY & MAINTAINABILITY RISK REDUCTION DEV.
ACRN: 9
Sec. Class: U
Descriptive Data:
 Technical effort shall be completed NLT 16 Jun 00.

| | | | | | | |
|------|--|---|---|--|--|-------------|
| 0004 | | 1 | U | | | 16 Sep 2000 |
|------|--|---|---|--|--|-------------|

Noun: DATA- EXHIBIT A
Sec. Class: U
Descriptive Data:
 All data shall be delivered in accordance with Exhibit A, Contract Data Requirements List (DD Form 1423), dated 29 Mar 1999. The Final Report shall be delivered NLT 16 Sep 00.

| ACRN | Appropriation/Lmt Subhead/Supplemental Accounting Data | Obligation Amount |
|------|--|-------------------|
|------|--|-------------------|

| | | |
|----|--|--------------|
| AB | ACRN Establish 57 03600 290 36E8 670131 000000 58300 27134F 503000 F0330L | \$244,833.00 |
|----|--|--------------|

New ACRN Amount: \$244,833.00
Funding breakdown: On CLIN 000102: +\$244,833.00
PR/MIPR: FD20600021107 / \$244,833.00

Descriptive data:
 Accounting Classification as it appears on AFMC Form 36:
 5703600 290 36E8 670131 583 27134F 503000 F0330L
 FSR: 004991 PSR: 282215 DSR: 018114

STATEMENT OF WORK**Contract Number:** F33657-96-D-2007**Task Order:** 0012**Date:** 14 March 00**Change** 1**Title:** Reliability and Maintainability Risk Reduction Development for F-15 Avionics Systems, Delivery Order**1.0 SCOPE****1.1 INTRODUCTION**

The F-15 aircraft mission capable rate is being adversely affected by the reliability and maintainability (R&M) of aging components. The purpose of this task is to develop and test prototypes to solve current problems and prevent similar problems in future developments. This will require formulating and implementing solutions to government identified problems. The final products include preproduction proof-of-design units, test qualification reports, and a documentation package that includes sufficient data necessary to procure production units of the Roll Torquer Power Amplifier (254264), Analog Switch (932054-502B) and 4KHZ Oscillator Power Amplifier (254265-1).

1.2 BACKGROUND

R&M degradation of the AN/APG-63 radar system decreases the mission capability rate of the F-15 Weapon System. WR-ALC analysis of avionics R&M problems identifies high payoff candidates for form, fit, function, and interface replacement. The candidates must be prototyped and tested to verify acceptability. The purpose of this task is to specifically refine the definition of the maintainability problems in the AN/APG-63 radar, develop and test prototype replacements and provide recommendations to minimize the problems with future F-15 avionics upgrades. This task shall provide the necessary improvements to the R&M of the AN/APG-63 to prevent the loss/degradation of mission capability future developments of F-15 Weapon System components.

2.0 APPLICABLE DOCUMENTS.

Robins Air Force Base drawings 9626025, 9579777, and 9579776 will be provided as Government Furnished Property (GFP).

3.0 REQUIREMENTS

The contractor shall provide the analysis, design, fabrication and testing necessary to identify and develop corrective measures for the critical R&M problems in the AN/APG-63 radar, specifically the Roll Torquer Power Amplifier (254264), Analog Switch (932054-502B) and 4KHZ Oscillator Power Amplifier (254265-1).

3.1 STUDIES

The contractor shall conduct engineering analyses to isolate and identify the causes of reported R&M problems. This effort includes reviews of maintenance and repair records, Quality Deficiency Reports (QDR), Material Deficiency Reports (MDR) and interviews with maintenance technicians. The contractor shall provide recommended solutions to the identified R&M problems. Recommended solutions shall identify how risk to the development of avionics systems can be mitigated. The findings of the study are reviewed with the government, at which time, recommended solutions to the problems are presented. Additional engineering analysis is required to resolve design anomalies discovered during the initial system qualification testing. The results of these analyses shall be reported to the Government via an Interim Technical Report and briefing (CDRLs A003, A005).

3.2 PROTOTYPE DEVELOPMENT

Upon acceptance of the proposed approach (from SOW paragraph 3.1) by the Government, the contractor prepares a detailed plan delineating the implementation of the approved approach. The plan shall be documented via an Interim Technical Report (CDRL A003). For items requiring replacement the contractor shall:

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3.2.1 Design prototype units using off-the-shelf components to the maximum extent possible.

3.2.2 Insure that all prototypes are form, fit, function and interface compatible with other elements of the system and that the prototype does not adversely affect the operation of the overall system.

3.2.3 Fabricate and test a minimum of three (3) engineering prototype units for each system component (CDRL A003).

3.2.4 Fabricate and test a minimum of five (5) preproduction prototype units for each system component. These devices are used to verify the form, fit, function of the device through SRU, LRU, subsystem and system tests (CDRL A003).

3.3 TECHNICAL DATA PACKAGE (TDP)

The contractor shall provide the data required for procurement of production units. This data is delivered as either an engineering change notice to the existing documentation or a TDP. The TDP shall be developed, using Robins Air Force Base drawings 9626025 and 9579776 for complete design and product definition data necessary to fabricate and test hardware identical in "function and behavior with timing" to that developed/modified/produced under this contract, including all special tooling, interface hardware, special test equipment, and support equipment delivered (CDRL A007).

4.0 PROGRAM MANAGEMENT

The contractor shall provide the management and engineering necessary to successfully complete this task. The contractor shall provide a detailed Task Accomplishment Plan (TAP) no later than 30 days after receipt of order. The contractor shall provide monthly status of his accomplishments referenced to the TAP. The contractor conducts Technical Coordination Meetings (TCMs). The contractor and the government shall agree upon the location. Design Reviews shall be held at either the contractor's or the subcontractor's facility. Design Reviews are to be held for each item and can be held concurrently. The first TCM shall be scheduled for 90 days following the receipt of the contract. The contractor shall provide agenda and minutes. The contractor shall be prepared to discuss policy direction, data items requirements, future meetings, and program milestones. TCMs shall be held every three (3) months at minimum and can be held concurrently with design reviews (CDRL A005). The contractor shall provide monthly reports of expenditures and technical progress (CDRLs A001, A002).

5.0 DATA MANAGEMENT

The contractor shall provide the documentation required accomplishing this task. The contractor shall provide the Interim Reports and drawings as described in paragraphs 3.1, 3.2, and 3.3 above. The contractor shall document results in the final report for each component (CDRL A004).